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IS 6893-12 (1992): Proforma for purchase specification for machine tools, Part 12: Horizontal boring and milling machines (table type) [PGD 3: Machine Tools]



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“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
मशीनी औजारों की क्रय-विशिष्टि का प्रपत्र
भाग 12 क्षैतिज वेधन और मिलिंग मशीनें (मेज नुमा)

Indian Standard

PROFORMA FOR PURCHASE SPECIFICATION
FOR MACHINE TOOLS

PART 12 HORIZONTAL BORING AND MILLING MACHINES (TABLE TYPE)

UDC 621'914'4 : 658'711'6 (082'22)

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

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Price Group 2

FOREWORD

The proforma for preparation of purchase specification for machine tools has been prepared to enable a prospective buyer to collect data from various manufacturers/suppliers for the purposes of comparison. This proforma is meant to be sent out with an enquiry by the purchaser so that the manufacturers/suppliers can fill in the data and send it back to the purchaser to make the comparison easier for the purchaser.

While preparing this standard considerable assistance has been taken from the data supplied by the leading manufacturers and users of the product.

Indian Standard

PROFORMA FOR PURCHASE SPECIFICATION FOR MACHINE TOOLS

PART 12 HORIZONTAL BORING AND MILLING MACHINES (TABLE TYPE)

1 SCOPE

This standard recommends the proforma for purchase specification for horizontal boring and milling machines. It also gives the essential information about the horizontal boring and milling machines and their accessories which will enable the user to assess their usefulness and suitability for requirements.

IS No.

Title

2340 : 1972

Dimensions for self-release 7/24 tapers for milling arbors and tool shanks (*first revision*)

2642 : 1985

Spacing for T-slots (*second revision*)

4691 : 1985

Degrees of protection provided by enclosures for rotating machinery

2 REFERENCES

Following Indian Standards are necessary adjuncts to this standard:

IS No.

Title

5 : 1978

Colours for ready mixed paint (*third revision*)

1231 : 1974

Dimensions of three-phase foot-mounted induction motors (*third revision*)

1715 : 1986

Dimensions for self holding tapers (*second revision*)

2013 : 1985

Dimension for T-slots (*second revision*)

6362 : 1971

Designation of methods of cooling for rotating electrical machines

9474 : 1980

Principles of mechanical guarding of machinery

10988 : 1984

Method of measurement of noise from machine tools

11958

(Part 1) : 1987

Test chart for boring and milling machines with horizontal spindle : Part 1 Table type machines

12075 : 1987

Mechanical vibration of rotating electrical machines with shaft heights 56 mm and higher-measurement, evaluation and limits of vibration severity

3 PROFORMA

Specification	Reference to Indian Standard	Unit	Actual Value
(1)	(2)	(3)	(4)

3.1 Spindle Head

3.1.1 Diameter of Drilling & Boring Spindle

mm

3.1.2 Internal Taper of the Spindle

IS 1715 : 1986/
IS 2340 : 1972MT No./ISO
Taper No.

3.1.3 Milling Spindle Nose

IS 2340 : 1972

ISO

3.1.4 Distance of Spindle Axis from Clamping Surface to Table

a) Minimum

mm

b) Maximum

mm

3.2 Table

3.2.1 Clamping Surface

mm × mm

3.2.2 Size of T-Slot

a) Nominal size

IS 2013 : 1985

mm

b) Number/spacing

IS 2642 : 1985

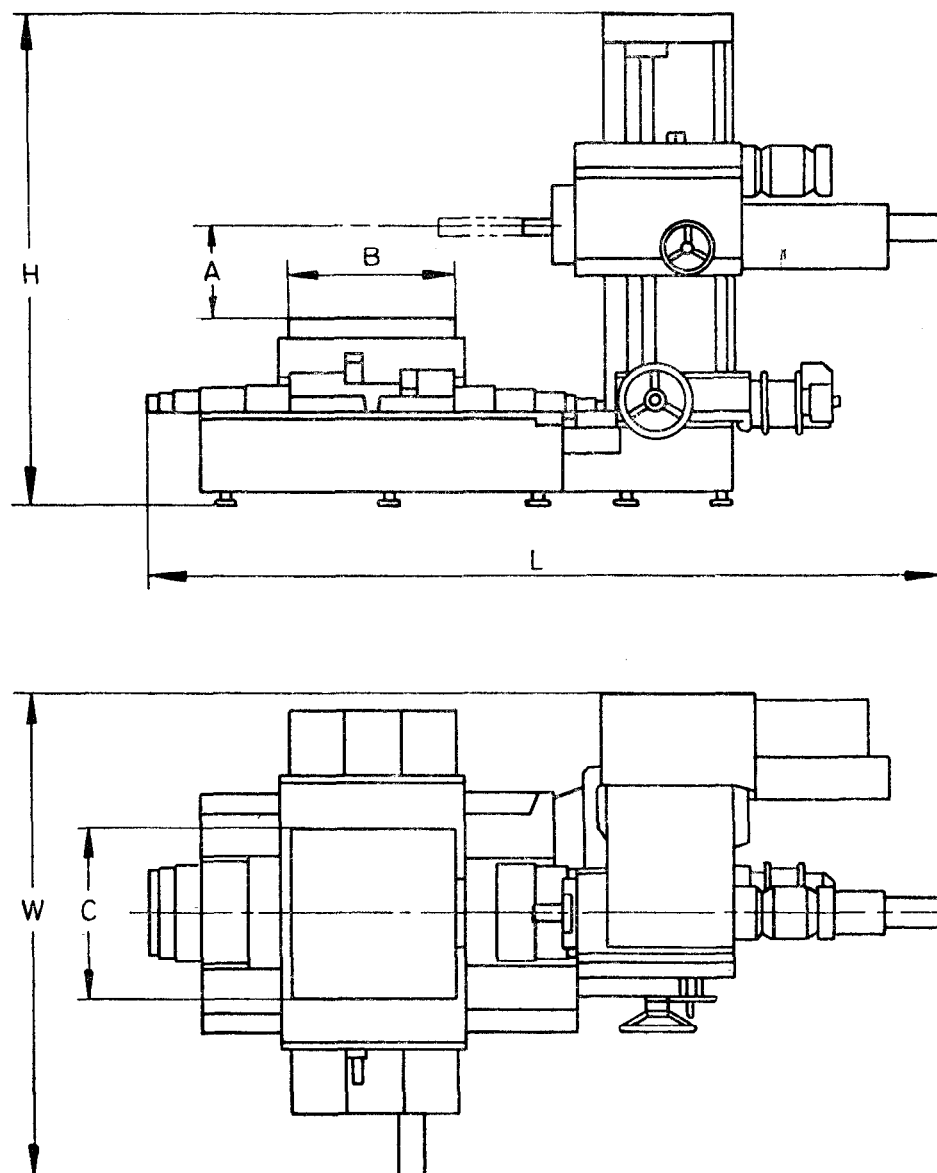
No./mm

Specification	Reference to Indian Standard	Unit	Actual Value
(1)	(2)	(3)	(4)
3.2.3 Maximum Load on Table		kg	
3.2.4 Table Area			
a) Clamping		Maximum	
b) Overall		Maximum	
3.3 Traverses			
3.3.1 Traverse of Drilling & Boring Spindle		mm	
3.3.2 Vertical Traverse of Spindle Head		mm	
3.3.3 Longitudinal Traverse of Table		mm	
3.3.4 Cross Traverse of Table		mm	
3.4 Spindle Speeds			
3.4.1 Number of Speeds/Range		rev/min	
3.5 Feeds		mm/rev	
3.5.1 Number of Feeds/Range		mm/min	
3.5.2 Rapid Traverse			
a) Longitudinal		m/min	
b) Transverse		m/min	
c) Vertical		m/min	
d) Boring spindle (axial)		m/min	
3.6 Lubrication			
3.6.1 Type of Lubrication Systems			
3.7 Electricals			
3.7.1 Total Power		kW	
3.7.2 Power Supply		V, Ph & Hz	
3.7.3 Motor(s)			
3.7.3.1 Main			
a) Type			
b) Frame size and mounting	IS 1231 : 1974		
c) Output		kW	
d) Speed(s)		rev/min	
e) No. of phases			
f) Power factor			
g) Efficiency		Percent	
h) Rated voltage		V	
j) Frequency		Hz	
k) Type of duty			
m) Class of insulation			
n) Ambient temperature		°C	
p) Type of protection	IS 4691 : 1985		
q) Type of cooling	IS 6362 : 1971		
r) Vibration limits	IS 12075 : 1987		
s) Any other feature			

<i>Specification</i>	<i>Reference to Indian Standard</i>	<i>Unit</i>	<i>Actual Value</i>
(1)	(2)	(3)	(4)
3.7.3.2 Other motor(s) (Feed motors, rapid traverse motor, coolant motor, etc)			
a) Type			
b) Frame size and mounting	IS 1231 : 1974		
c) Output		kW	
d) Speed(s)		rev/min	
e) No. of phases			
f) Power factor			
g) Efficiency		Percent	
h) Rated voltage		V	
j) Frequency		Hz	
k) Type of duty			
m) Class of insulation			
n) Ambient temperature		°C	
p) Type of protection	IS 4691 : 1985		
q) Type of cooling	IS 6362 : 1971		
r) Vibration limits	IS 12075 : 1987		
s) Any other feature			
3.8 Noise Emitted by Machine	IS 10988 : 1984	dB (A)	
3.9 Mechanical Guarding	IS 9474 : 1980		
3.10 Geometrical and Practical Accuracy	IS 11958 (Part 1) : 1987		
3.11 Colour(s)	IS 5 : 1978		
3.12 Weight of the Machine with Standard Equipment		kg	
3.13 Floor Space Required (Length × Width × Height)		mm × mm × mm	
3.14 Facing Head			
a) Diameter of facing head		mm	
b) Traverse of facing slide		mm	
c) i) Boring and facing dia; <i>Max</i>		mm	
ii) Turning dia; <i>Max</i>		mm	
3.15 Standards Accessories (Details of accessories — IS No. to be specified wherever applicable)			
3.16 Special Accessories Boring stay, Milling head, Boring bars, Tool holders, Rotary table, Digital readouts, Indexing tables, etc			
NOTE — While submitting quotations, the following information shall be furnished by manufacturers/suppliers together with technical literatures and capacity chart of the machine (see Annex A for a representative capacity chart for horizontal boring and milling machine):			
a) Hardness of guideways of 1) Column			
2) Table			
b) Any other special features			

ANNEX A

REPRESENTATIVE CAPACITY CHART FOR HORIZONTAL MILLING AND BORING MACHINES



- A — Spindle axis to table clamping surface minimum/maximum ==
- B — Table length ==
- C — Table width ==
- L — Overall length ==
- W — Overall width ==
- H — Overall height ==

NOTE — Manufacturers/suppliers shall specify the basic information called for in the figure as given above.

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